# Michigan Potash Operating, LLC

November 25th, 2015

Mr. Alan Batka Class I Well Permitting UIC Branch (WU-16J) US EPA Region 5 77 W. Jackson Blvd Chicago, IL 60604-3590 EN BEGIONS

DEC 085012



RE: Class I UIC Non-Hazardous Permit Application

REQUEST FOR REVISED P&A WELLBORES AND P&A PLAN

Sent: VIA E-MAIL and USPS Priority Tracking

Dear Mr. Batka:

Please find attached, respectfully submitted to your attention for formal review, in response made via phone correspondence on November 20<sup>th</sup>, 2015; whereby, revised plugging detail was requested regarding the MPC 1D the MPC 2D and the MPC 3D.

Please find attached,

- (1) Reverted P&A Plans, EPA Form 7520-14 for the MPC 1D, MPC 2D and MPC 3D, removing reference to perforations in the Reed City.
- (2) Revised P&A Wellbore Diagrams for the MPC 1D, MPC 2D, and MPC 3D, removing reference to perforations in the Reed City; and

Signed originals have been placed into the mail USPS via priority tracking.

Please feel free to contact me directly with comments, questions, or concerns.

Sincerely,

Theodore Pagano, P.E., P.G.

Manager

Michigan Potash Operating LLC

**\$EPA** 

VE			PLU	GGING	AND	) ABA	NDON	IME	ENT PLA	AN			3	
MPC 1	I Address of Fa	cility					Michigan	Pota		Operator g, LLC c/o 00, Denver,				
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	;		-+-  -+-  	St	Locate well in two directions from nearest lines of quarter section and drilling unit Surface   Location ft. frm (N/S) $N$ _ Line of quarter section $^{1051}$ FRM N and ft. from (E/W) $W$ _ Line of quarter section. 376 FRM W									
w			<del> </del>   E			TYPE OF	AUTHORIZ	ATION	ı	T	WELL A	CTIVITY		
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	CA	SING AND TUB	ING RECORD	AFTER PL	UGGING	;			METH	OD OF EMPL	ACEMENT O	F CEMENT PI	LUGS	
SIZE	WT (LB/FT)	TO BE PUT IN	WELL (FT)	TO BE LE	FT IN W	ELL (FT)	HOLE S	IZE	The	Balance Me	thod	80		
9 5/8	36	800		800		HALL SECTION AND A	13 3/8		The	Dump Baile	r Method			
7	23-28	5160		5160			8 3/4		The	Two-Plug M	lethod			
				4			-		✓ Oth	er				
lines or trackly							1					<u> </u>		
		TO PLUG AND				PLUG #1		#2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7	
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	d Top of Plug (					5130	0		Assessment Co.	1	Andrew Commonwell			
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Name a	nd Official Title	(Please type	or print)		Sig	nature/						Date Signe	d	
A	ore A. Pagano		1 June 12 - 12 - 1	ager	70	7			A CONTRACTOR OF THE PARTY OF TH			11/25/201	(C)	
Constitution of		to the second second second				7/1	Maria Ma		TOTAL CHARLES AN ADMINISTRATIO	J.A.V		11,23/201		

## MPC 1D (AMENDED NOVEMBER 2015)

SURFACE: NW/4 SEC 31, T17N R08W, 43.825947, -85.323008

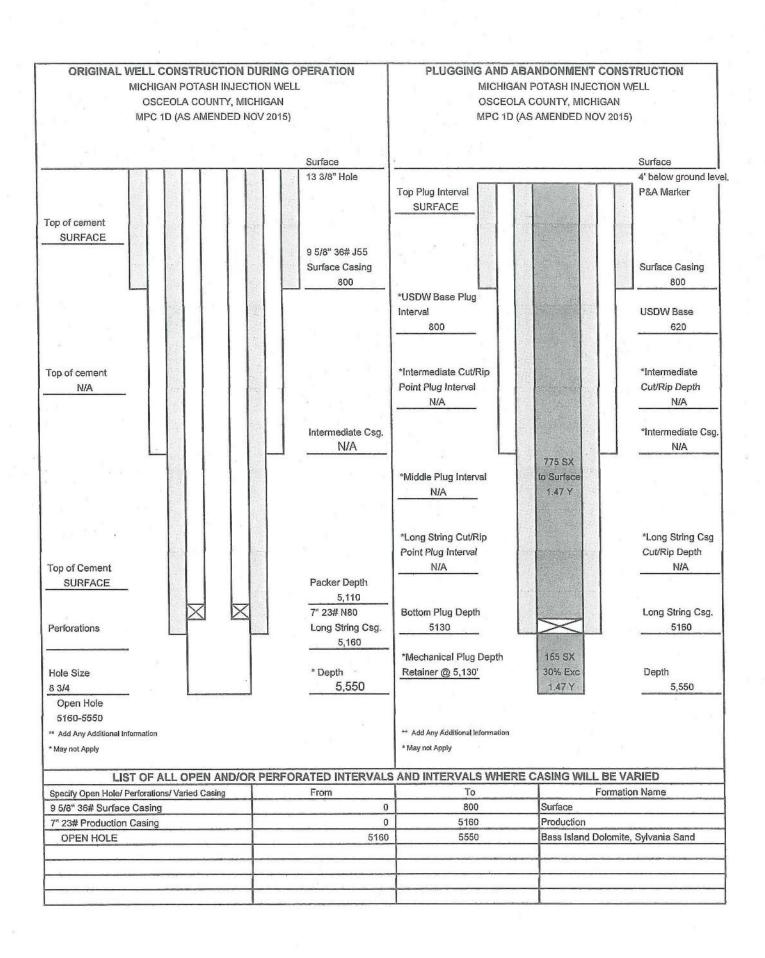
# VERTICAL WELL

# OSCEOLA COUNTY, MI

# P & A WELLBORE DIAGRAM GL @ +/-1,124'

	TVD	MD	KB @ +/- 1137°	UPDATED NOVEMBER 25TH BY TAP
Quaternary H	0	0		
Quaternary G	0	0		13 3/8" HOLE
Quaternary F1	59	59		SURFACE CASING
Quaternary F	138	138		9-5/8" 36# J-55
Quaternary E	323	323		SET @ 800'
Quaternary E/1	393	393		Cement to Surface
Quaternary D	439	439		320 SX 50/50 Poz and Lite, 1.47 Yield
Jurrasic Red Beds	513	513		and of our of the different first
ennsylvantian				Lowest USDW at 550', behind surface casing
Michigan	1205	1205		
			8	3/4" HOLE DRILLED TO 5,550' (5,550 TVD)
Marshall Sandstone	1653	1653		*
Coldwater Shale	1818	1818		
Joidwater Strate	1010	1010		
	0505	0505		
Antrim Shale	2565	2565		PRODUCTION CASING
				7" 23-38# N-80
				SET @ 5,160' MVD, TVD
Traverse Formation	3228	3228		DV Tool @ 3,500'
				Cement from Shoe to Surface
Arranda de Campana de la como de				Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield
		W		Stage 2: 430 SX 14.2 LITE, 1.47 Yield
Bell Shale	3802	3802		
Dundee/Reed City	3858	3858		
bundee/Reed Oity	5050	3030		
				Plug Cement from Retainer to Surface
Detroit River Group	4088	4088		775 SX Class A, Neat from Cmt Retiainer to Surfa
				1.47 Yield
Amherstburg	4962	4962		
Aithasway	7302	4002		Cement Retainer @ 5,130'
Sylvania Sand Stone	5105	5105		*
Bois Blanc	5300	5300		Squeeze 175 SX Class A, Neat below Cmt Retainer I.47 Yield at 130%.
Bass Islands Group	5355	5355		THE LIGIT OF 190 10.
East Ballos Group	9099	0000		
			PBTD = TD	

Figure 14. P&A



O FDA

W CI			PLU	GGII	NG ANI	D ABA	NDON	MENT F	LAN					
MPC 2	Address of Fa	cility	7 S		eupo basa s	1	Michigan I		ating, LI	.C c/o	Fox Rothsc	hild		
							1225 17th	Street, Suit	2200, D	enver	, CO 80215			
	ate Well and Oution Plat - 640 A				State Michiga	in		County Osceola			Permit N	lumber		
260	IOII Plat - 040 A				Surface L									
		N II I I			se 1/4 c	of SW 1/4	of nw 1/4	of NW 1/4 c	f Section	n 31	Township _	7 Range	8	
		-	- <del> </del>		Locate we Surface Location	Locate well in two directions from nearest lines of quarter section and drilling unit  Surface  Location ft. frm (N/S) N _ Line of quarter section 1050 FRM N  and ft. from (E/W) W _ Line of quarter section. 396 FRM W								
100	1 1 1					TYPE OF	AUTHORIZA	TION		_	WELL A	CTIVITY		
W					Individual Permit  Area Permit  Rule  Number of Wells 1				CLASS I  CLASS II  Fine Disposal  Enhanced Recov  Hydrocarbon Sto			covery		
		S			Lease Na	ma.			Mal	II Muses	MPC 21	D		
	CA	SING AND TUB	INC DECORE	AETE				T 14	Well Number MPC 2D  METHOD OF EMPLACEMENT OF CEMENT PLUGS					
							HOLE OF		ETHOD OF	r EWPL	ACEMENT O	r CEMENI PI	.065	
SIZE	WT (LB/FT)	TO BE PUT IN	OWELL (FI)		E LEFT IN W	ELL (F1)	13 3/8	2E	The Bala					
9 5/8	23-28	5700		800 5700			8 3/4				er Method			
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	CEMENTING	TO PLUG AND	ABANDON DA	TA:		PLUG #	1 PLUG	2 PLUG	#3 PLI	JG #4	PLUG #5	PLUG #6	PLUG #7	
Size of h	lole or Pipe in v	which Plug Wil	I Be Placed (	inche:		8 3/4"	7"							
Depth to	Bottom of Tub	ing or Drill Pip	e (ft bot	tom o	of plug	5700	5590							
Sacks of	Cement To Be	Used (each plu	1g)			160.00	1030	Name of the page of the	Control Section 1995				L	
Slurry V	olume To Be Pu	imped (cu. ft.)				233.00	1511.0	00					I amount of the same	
	ed Top of Plug					5590	0				L. Congress			
	d Top of Plug (	if tagged ft.)				5590	. 0				(1 1 1 1 1 1 1 1	Company of the second	THE RESERVE ASSESSED.	
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Name a	nd Official Title	(Please type	or print)		Sig	gnature	)					Date Signer	d	
100000000000000000000000000000000000000	ore A. Pagano		and Surviva Special control	ager		A	to the same of the		<			11/25/201		
1	rm 7520 14 (Do		and the second			4		november and the second	*	-	AND THE PROPERTY.	Section 1994 Section		

#### MPC 2D (AS AMENDED NOV 2015)

SURFACE: NW/4 SEC 31, T17N R08W, 43.825948, -85.322932 BOTTOM: SW/4 SEC 30, T17N R08W; 43.832871, -85.322873

#### OSCEOLA COUNTY, MI

#### PLUGGED WELLBORE DIAGRAM

GL @ +/-1,124' TVD MD Geological Zone Quaternary H 0 0 117 117 Quaternary G Quaternary F1 165 165 Quaternary F 196 196 Quaternary E 342 342 Quaternary E/1 410 410 Quaternary D 461 461 Jurrasic Red Be Pennsylvantian 706 706 Michigan 1261 1317 Marshall Sandstone 1719 1836 Coldwater Shale 1893 2034 2897 Antrim Shale 2653 3626 Traverse Formation 3296 Bell Shale 3889 4299 Dundee/Reed City 3945 4363 Detroit River Group 4170 4618 4962 5517 Amherstburg 5718 Sylvania Sand Stone 5194

5437

6057

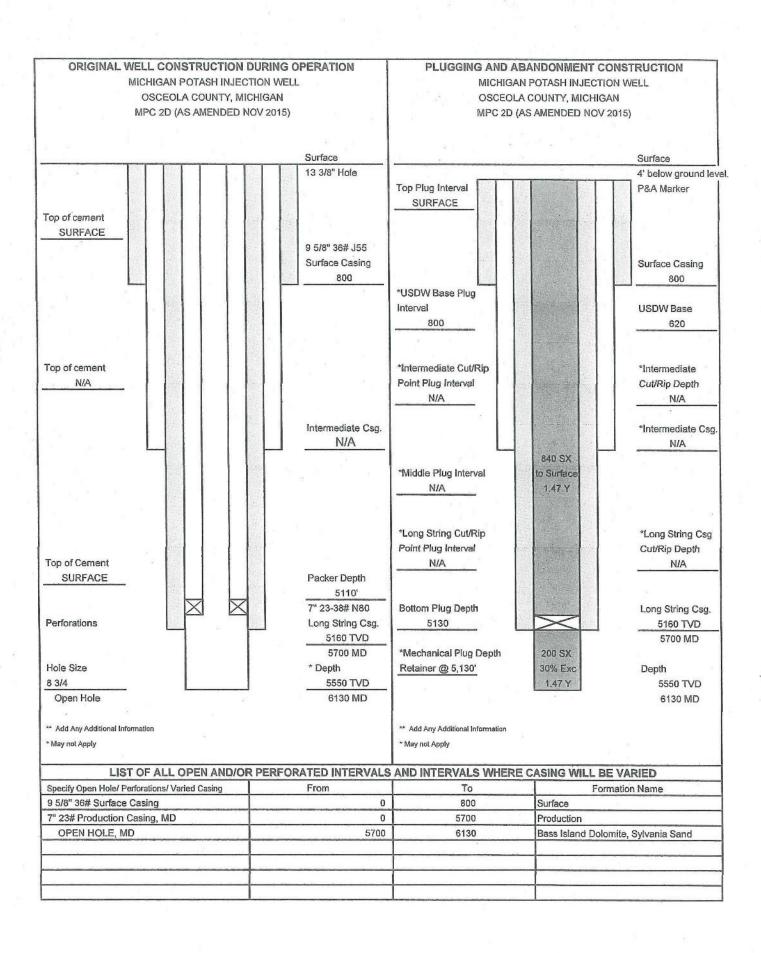
Bass Islands Group

UPDATED MAY 22, 2015 BY TAP KB @ +/- 1137 13 3/8" HOLE SURFACE CASING 9 5/8" 36.0# J-55 SET @ 800' Cement to Surface 320 SX 50/50 Poz and Lite, 1.47 Yield Production String 4.5# 11.6-15.5 L-80 Arrow Set 10K 7" Packer at +/- 5600' MD Set in Compression Annulus fluid is inhibited brine, +/- 1.1-1.2 SG 8 3/4" HOLE PRODUCTION CASING 7" 23# N-80 SET @ 5,700' MVD, +/- 5,160' TVD BASE of AMHURSTBURG DV Tool @ 3,500' TVD, 3,858', MD Cement from Shoe to Surface Stage 1: 270 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 473 SX 14.2 LITE, 1.47 Yield Plug Cement from Retainer to Surface 840 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield Cement Retainer @ 5,590 MD. Squeeze 200 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.

FIGURE F14. P & A.

PBTD = TD

TD @ +/- 5,550' TVD, 6,130 MD



**©EPA** 

ACI			PLU	GGII	IG AN	D ABA	NDON	ME	NT PLA	AN				
lame and	Address of Fa	cility				N	ame and A	ddres	s of Owner/	Operator				
MPC 31	D								ash Operating, LLC c/o Fox Rothschild eet, Suite 2200, Denver, CO 80215					
	ate Well and O		11		State Michiga	ın		Osc	nty ceola	District Control	Permit N	lumber		
000					Surface I	ocation De	escription	-				-		
-	111	N.			SW 1/4	of SE 1/4	of <u>NE</u> 1/4	of S	E 1/4 of 8	Section 36	Township _	7 Range	9	
	┤_	-   - - + - -   -	- <del> </del> -   - <del> </del> -   - <del> </del> -		Locate well in two directions from nearest lines of quarter section and drilling unit  Surface  Location ft. frm (N/S) N Line of quarter section 1168 FRM N  and ft. from (E/W) E Line of quarter section. 442 FRM E									
w	<del>                                     </del>				TYPE OF AUTHORIZATION Individual Permit Area Permit Rule Number of Wells				CLASS I  CLASS II  CLASS II  CHASS II  Hydrocarbon Storag			al covery	,	
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		ONO NEED			Lease Na			T					lles.	
DITE		SING AND TUE				·	HOLE SI	-	-			F CEMENT PI	LUGS	
9 5/8	WT (LB/FT)	TO BE PUT IN	A WELL (FI)	800	E LEFT IN V	VELL (FI)	13 3/8			Balance Me				
7	23-28	5160	distribution of	5160		3-2-2-4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	8 3/4		The Dump Bailer Method  The Two-Plug Method					
	25 20			3100			1		Ŭ Oth		wented			
					•0-17-18-17-17-11-11-					01				
NORTHEREDISTR	CEMENTING	TO PLUG AND	ABANDON DA	ATA:	ACCORDING CONTRACTOR	PLUG #	PLUG	#2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7	
Size of I	lole or Pipe in	which Plug Wi	II Be Placed (	inche:		8 3/4"	,7"					L		
Depth to	Bottom of Tul	ing or Drill Pip	pe (ft botto	m of	plug	5550	5130					To produce the second		
Sacks of	Cement To Be	Used (each plu	ug)			155	775							
	olume To Be P					228	1140							
	ed Top of Plug					5130	0			CONTRACTOR OF THE			HERVEL CONTRA	
	d Top of Plug (	if tagged ft.)				5130	0				harman and and	) 	Anna anna anna	
	Vt. (Lb./Gal.)	Water to the same	IIIX			14.2	14.2		-			-	ļ	
Type Ce	ment or Other I					A	Α				<u> </u>	L		
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A TOTAL			y britain to the		WE HER WITH THE		ACCEPTANCE.	-1-1050	Water to car	National Property of the Party				
Estimat	ed Cost to Plug	Wells			no es estado									
\$ 30,4	100													
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	•			JU OF K								Data Cine	J	
	nd Official Title	CONTRACTOR			Si	gnature						Date Signed		
Theod	lore A. Pagano	), F.E., P.G., (	jenerai Man	ager			and the state of t				Transport (gg	11/25/201	5	
-								ACCORDING	-			Control of the Control	new Magnetian (Inc.)	

# MPC 3D

## SURFACE: NE/4 SEC 36, T17N R09W, 43.818448, - 85.326073

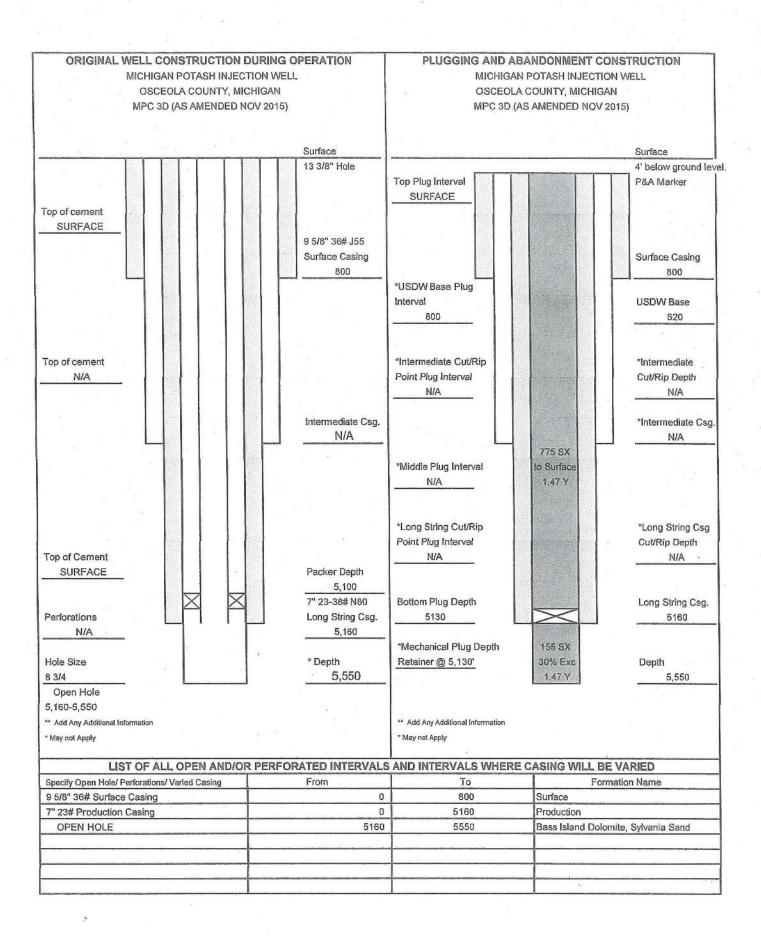
# VERTICAL WELL

## OSCEOLA COUNTY, MI

# PLUGGED WELLBORE DIAGRAM GL @ +/-1,190'

Duatemary G		TVD	MD	KB @ +/- 2003'	UPDATED MAY 22ND 2015 BY TAP
Quaternary F1   59   59   59   Quaternary F1   38   138   323   323   Quaternary E1   393   393   393   Quaternary E1   393   393   Quaternary E1   393   393   Quaternary E1   393   439   Quaternary E1   393   Quaternary E1   393   Quaternary E1   Quaternary E1   393   Quaternary E1   Quaterna	Quaternary H	0	0		
Duatemary F	Quaternary G	0	0	<b>一种</b>	13 3/8" HOLE
Surface   323   323   323   323   323   323   324   324   325   325   326   327	Quaternary F1	59	59		SURFACE CASING
Quaternary E/1   393   393   293   293   293   293   293   294   294   295	Quaternary F	138	138		9-5/8" 36# J-55
Quaternary E/1   393   393   393   2021   235   235   2565   25	Quaternary E	323	323		SET @ 800'
Autrim Shale   2565		393	393		
Lowest USDW at 550', behind surface casing.					
Lowest USDW at 550°, behind surface cosing.					out of our of out the first from
### Antrim Shale	Pennsylvantian				Lowest USDW at 550', behind surface casing.
Antrim Shale 1818 1818  Antrim Shale 2565 2565  PRODUCTION CASING 7" 23# N-80 SET @ 5,160" MVD, TVD DV Tool @ 3,500" Cament from Shoe to Surface Slage 1: 240 SX 50/50 Poz-Class A, 1,24 Yield Slage 2: 430 SX 14.2 LITE, 1,47 Yield  Plug Cement from Retainer to Surface 778 SX Class A, Neat from Cmt Retainer to Surface 778 SX Class A, Neat from Cmt Retainer to Surface 1,47 Yield Cement Retainer @ 5,130"  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300 Bass Islands Group 5355 6355	Michigan	1205	1205		
Antrim Shale 2565 2565  Antrim Shale 2565 2565  Fraverse Formation 3228 3228  Fraverse Formation CASING  Fra					8 3/4" HOLE DRILLED TO 5,550' (5,550 TVD)
### Production Casing	Marshall Sandstone	1653	1653		
### Traverse Formation   3228   3228   3228   Traverse Formation   3228   3228   SET @ 5,180° MVD, TVD   ### DV Tool @ 3,500° Cement from Shoe to Surface Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ### Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ##	Coldwater Shale	1818	1818		
### Traverse Formation   3228   3228   3228   Traverse Formation   3228   3228   SET @ 5,180° MVD, TVD   ### DV Tool @ 3,500° Cement from Shoe to Surface Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ### Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ##					
### Traverse Formation   3228   3228   3228   Traverse Formation   3228   3228   SET @ 5,180° MVD, TVD   ### DV Tool @ 3,500° Cement from Shoe to Surface Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ### Stage 2: 430 SX 14.2 LITE, 1.47 Yield   ##					
SET @ 5,160° MVD, TVD	Antrim Shale	2565	2565		PRODUCTION CASING
DV Tool @ 3,500'   Cement from Shoe to Surface   Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield					7" 23# N-80
DV Tool @ 3,500'   Cement from Shoe to Surface   Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield   Stage 2: 430 SX 14.2 LITE, 1.47 Yield					SET @ 5,160' MVD, TVD
Cement from Shoe to Surface Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 430 SX 14.2 LITE, 1.47 Yi	Traverse Formation	3228	3228		
Stage 1: 240 SX 50/50 Poz-Class A, 1.24 Yield Stage 2: 430 SX 14.2 LITE, 1.47 Yield Stage 2: 430 SX 14.2 LIT					
Bell Shale Dundee/Reed City 3858 3858  Detroit River Group  4088  4088  Plug Cement from Retainer to Surface 776 SX Class A, Neat from Cmt Retainer to Surface 1.47 Yield Cement Retainer @ 5,130'  Sylvania Sand Stone 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD					
Detroit River Group  4088  4088  Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone  5105  5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD			twitten.		Stage 2: 430 SX 14.2 LITE, 1.47 Yield
Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retainer to Surface 1.47 Yield Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105 Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.	Bell Shale	3802	3802		
Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD	Dundee/Reed City	3858	3858	<b>计算程序模拟</b>	
Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD					
Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD					
Plug Cement from Retainer to Surface 775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD	Detroit River Group	4088	4088		
775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300 Bass Islands Group 5355 5355  PBTD = TD					
775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300 Bass Islands Group 5355 5355  PBTD = TD				<b>新闻型独立新疆</b>	
775 SX Class A, Neat from Cmt Retiainer to Surface 1.47 Yield  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300 Bass Islands Group 5355 5355  PBTD = TD					Plug Cement from Retainer to Surface
Amherstburg 4962 4962  Cement Retainer @ 5,130'  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300  Bass Islands Group 5355 5355  PBTD = TD					
Arnherstburg 4962 4962  Sylvania Sand Stone 5105 5105  Bois Blanc 5300 5300  Bass Islands Group 5355 5355  PBTD = TD	the Color and Company of Charles				
Sylvania Sand Stone 5105 5105  Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD	Archerstburg	4962	4962		
Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD					Cement Retainer @ 5,130'
Squeeze 175 SX Class A, Neat below Cmt Retainer 1.47 Yield at 130%.  PBTD = TD	Sylvania Sand Stone	5105	5105		
Bois Blanc 5300 5300 1.47 Yield at 130%.  Bass Islands Group 5355 5355  PBTD = TD					Squeeze 175 SX Class A, Neat below Cmt Retainer
Bass Islands Group 5355 5355 PBTD = TD	Bois Blanc	5300	5300		
PBTD = TD			1000 Miles and 1000 Miles (117.0)		
				PBTD = TD	
				TD @ +/- 5,550'	

Figure 14. P & A



	<b>PA</b>		PLU	GGING	3 AND	) abai	NDONM	ENT PLA	NA					
MPC 1	d Address of Fa	cility				Name and Address of Owner/Operator  Michigan Potash Operating, LLC c/o Fox Rothschild 1225 17th Street, Suite 2200, Denver, CO 80215								
1007	cate Well and Oction Plat - 640 A	- 0.00		100	tate Michiga	n.		ounty Sceola	-	Permit N	lumber			
000	.uon 1 lat - 040 2		-	S	Surface Location Description									
		N N		s	e 1/4 o	F SW 1/4 o	f nw 1/4 of	<u>nw</u> 1/4 of	Section 31	Township	7 Range	8		
			- <del> </del> -   - <del> </del> -   - <del> </del> -	S	Locate well in two directions from nearest lines of quarter section and drilling usual Surface   Location ft. frm (N/S) $N$ Line of quarter section $1051$ FRM N and ft. from (E/W) $W$ Line of quarter section. $376$ FRM W									
w	$\dot{+}\dot{+}\dot{+}$		HE			TYPE OF A	UTHORIZATIO	N	Parents.	WELL A	CTIVITY			
	<del> - - -</del> 	s			Area Rule	of Wells 1			☐ E ☐ H ☐ CLAS	SS II Brine Disposal Enhanced Recovery Hydrocarbon Storage				
					ease Nar				Well Numb	er Mac 1				
	CA	SING AND TUB	ING RECORD	AFTER P	LUGGING	)		METH	OD OF EMPL	ACEMENT OF	F CEMENT PL	.UGS		
SIZE	WT (LB/FT)	TO BE PUT IN	WELL (FT)	TO BE LI	EFT IN W	ELL (FT)	HOLE SIZE	The	Balance Me	thod				
9 5/8	36	800		800			13 3/8	The	Dump Baile	r Method				
7	23-28	5160		5160			8 3/4	The	Two-Plug M	lethod				
								✓ Oth	er					
			-				7	-			AND DESCRIPTION OF THE PARTY OF			
D:		TO PLUG AND				PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7		
	Hole or Pipe in Bottom of Tul				TIG (e)	8 3/4" 5550	5130	-						
	f Cement To Be			TOF FI	00 (0)	155	775	-						
	olume To Be P		.97			228	1140					<del> </del>		
	ted Top of Plug					5130	0							
Measure	ed Top of Plug (	if tagged ft.)				5130	0							
			Welling - William		illa — destant	1112	14.2	1						
Slurry V	Vt. (Lb./Gal.)					14.2	17.2							
	Vt. (Lb./Gal.) ement or Other I	Material (Class I	HI) ·			14.2 A	A							
	ement or Other I	Material (Class I		PERFORA	TED INT	A	A	WHERE CAS	ING WILL BE	VARIED (if a	iny)			
	ement or Other I			PERFORA To	TED INTE	A	A	WHERE CAS	ING WILL BE	VARIED (if a	iny) To			
Type Ce	ement or Other I			То	TED INTE	A	A		ING WILL BE	VARIED (if a				
Type Ce	ement or Other I LI: Fram		OLE AND/OR	То	TED INT	A	A		ING WILL BE	VARIED (if a				
Type Ce	ement or Other I LI: Fram		OLE AND/OR	То	TED INTE	A	A		ING WILL BE	VARIED (if a				
5160 (	Lk From Open hole	ST ALL OPEN H	OLE AND/OR	То	TED INTE	A	A		ING WILL BE	VARIED (if a				
5160 (	Ement or Other I  Lk  Fram  Open hole	ST ALL OPEN H	OLE AND/OR	То	TED INTE	A	A		ING WILL BE	VARIED (if a				
5160 ( Estimat \$ 30,4	Ement or Other I  Lk  Fram  Open hole	e penalty of lay	oLE AND/OR 5550 Oper	To 1 Hole personally of those in 1 am awa	examine dividuals re that th	Certificated and am fishmediate	A ID INTERVALS	From  he informatio le for obtaini	n submitted	in this docu	To  ment and all eve that the			
5160 (	Ement or Other I  Lik  From  Open hole  ed Cost to Plug  100  certify under the ttachments and formation is tressibility of fin	Wells  Wells  e penalty of law that, based on ue, accurate, ar e and imprison	w that I have my inquiry ind complete. ment. (Ref.	To 1 Hole personally of those in 1 am awa	examine dividuals re that th	Certificated and am for immediate tere are sign	A ID INTERVALS	From  he informatio le for obtaini	n submitted	in this docu	ment and all eve that the including the			
5160 C	Prometer for the properties of	e penalty of lav that, based on ue, accurate, are and imprison	w that I have a my inquiry and complete, ment. (Ref.	To 1 Hole personally of those in I am awa 40 CFR 14	examine dividuals re that th	Certificated and am fishmediate	A ID INTERVALS	From  he informatio le for obtaini	n submitted	in this docu	To  ment and all eve that the	i		

**SEPA** 

	FLU	ااتاتا	ng ani	G AND ABANDONMENT PLAN									
Name and Address of Facility MPC 2D		11 12			Micl	nigan Pot	ess of Owner/ ash Operatin eet, Suite 22	g, LLC c/o		hild			
Locate Well and Outline Unit on Section Plat - 640 Acres			State Michiga	n		14	ounty sceola	umber					
			Surface Location Description										
N .	$\neg \neg$		sc 1/4 o	f SW 1/4	of n	W 1/4 of	<u>nw</u> 1/4 of	Section 31	Township ]	7 Range	8		
	<del> </del>		Locate well in two directions from nearest lines of quarter section and Surface Location ft. frm (N/S) $N$ _ Line of quarter section $^{1050^{\circ}}$ FRM and ft. from (E/W) $W$ _ Line of quarter section. 396 $^{\circ}$ FRM W										
w	E					HORIZATIO	N	F21		CTIVITY			
	1	vidual Per	mit			CLAS							
	***		Permit				☐ CLAS						
		Rule	of Wells	1			l covery Storage						
s			Lease Na	me			Well Number MPC 2D						
CASING AND TUBI	IG RECORD	AFTER	RPLUGGING	3			METHOD OF EMPLACEMENT OF CEMENT PLUGS						
SIZE WT (LB/FT) TO BE PUT IN	NELL (FT)	TO B	E LEFT IN W	ELL (FT)	Н	DLE SIZE	The	Balance Me	thod				
9 5/8 36 800		800			13	3/8	1 =	Dump Baile	(007,1007)				
7 23-28 5700		5700			8.3	3/4	The Two-Plug Method						
							1 1						
CEMENTING TO PLUG AND A	BANDON DA	TA:		PLUG#	1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7		
Size of Hole or Pipe in which Plug Will	Be Placed (	inche:		8 3/4"	_	7"							
Depth to Bottom of Tubing or Drill Pipe		tom o	of plug	5700	-	5590							
Sacks of Cement To Be Used (each plug	1)			160.00	-	1030	-						
Slurry Volume To Be Pumped (cu. ft.) Calculated Top of Plug (ft.)				233.00	_	1511.00	-		ļ				
Measured Top of Plug (if tagged ft.)				5590	-	0	-			-	<u> </u>		
Slurry Wt. (Lb./Gal.)				14.2		14.2	-						
Type Cement or Other Material (Class III	)		4	A		A	-				-		
LIST ALL OPEN HO		PERFO	RATED INT			SECURITY STATES	WHERE CAS	ING WILL BE	VARIED (if:	inv)			
From			o				From	I	(11	To			
5185 TVD, 5700 MD open hole	5550 TVD	, 6130	MD open	hole							-		
					50X T.L.								
Estimated Cost to Plug Wells													
\$ 30,400					20								
					and the same of	military Comment		and the same of th					
I certify under the penalty of law attachments and that, based on information is true, accurate, and possiblity of fine and imprisonn	my inquiry of d complete.	f those	e individual ware that tl	s immedia	fam	iliar with t responsib	le for obtaini	ng the inform	nation, I beli	eve that the	e		
attachments and that, based on information is true, accurate, and	my inquiry of d complete. nent. (Ref.	f those	individual ware that the 144.32)	ed and am s immedia	fam	iliar with t responsib	le for obtaini	ng the inform	nation, I beli	eve that the			

*E	A		PLU	GGIN	IG ANI	D ABA	NDO	NME	ENT PLA	AN			>
Name and	Address of Fa	cility			-				ess of Owner				
MPC 3	D								ash Operation eet, Suite 22			hild	
	ate Well and Or tion Plat - 640 A				State Michiga	n	31	20000	unty sceola	Mag.	Permit N	lumber	
- Contraction		N			Surface L	ocation D	escriptio	n		No soli in the solid in the sol			- Total Linds
	1 1 1	1 1 1			SW 1/4 o	F SE 1/4	of NE	/4 of _	SE 1/4 of	Section 36	Township _	7 Range	9
	1 - L - L - 1 - L - H - 1 - L - H -	-   - -	- <del> </del>		Locate well in two directions from nearest lines of quarter section and drilling unit  Surface  Location ft. frm (N/S) N_ Line of quarter section 1168 FRM N  and ft. from (E/W) E_ Line of quarter section. 442 FRM E								
w			E		-	TYPE OF	AUTHOR	ZATIO	N			CTIVITY	
00	1 1 1	✓ Indi	vidual Per	mit			V CLAS	SI	10				
	<b>†</b> - -†-	TTT		Area	Permit				CLAS				
-	<del></del>				Rule	е					rine Disposa		
-	<del> </del>			Number	of Wells	1		Enhanced Recovery Hydrocarbon Storage CLASS III					
		s			Lease Na	me				1 24 20000000000000000000000000000000000	mer MPC 3	)	
	CA	SING AND TUB	ING RECORD	AFTER	PLUGGING	3			METH	OD OF EMPL			UGS
SIZE	WT (LB/FT)	TO BE PUT IN	WELL (FT)	TO BE	LEFT IN W	ELL (FT)	HOLE	SIZE	l The	e Balance Me	thad		
9 5/8	36	800		800			13 3/8		1 =	e Dump Baile			
7	23-28	5160		5160			8 3/4		The Two-Plug Method				
								✓ Oth					
	OF MENTING	70011104110	ADAMBOND			T 21.110.4	1 7 5111	0.40	D1 110 110	I neuro se		DI 110 110	
Size of l	lole or Pipe in	TO PLUG AND				8 3/4"	7"	G #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
	Bottom of Tub				oluq	5550	513	0	<b></b>				
	Cement To Be					155	775		-				
	olume To Be Pı					228	114						
Calculat	ed Top of Plug	(ft.)				5130	0						
Measure	d Top of Plug (	if tagged ft.)				5130	0						
Slurry V	it. (Lb./Gal.)					14.2	14.2	2					
Type Ce	ment or Other I	Material (Class	III)		***	A	A						
	LIS	ST ALL OPEN H	OLE AND/OR	PERFO	RATED INT	ERVALS A	ND INTE	RVALS	WHERE CAS	SING WILL BE	VARIED (if a	iny)	American of correct
	From			To	,				From	T		To	
5160 (	pen Hole		5550 Oper	1 Hole		7	ter miles on						
												p4	
Estimat	ed Cost to Plug	Wells											
\$ 30,4	D-800	Melis											
a	certify under th ttachments and	that, based or	ny inquiry (	of those	lly examin individual	s immedia	familiar tely resp	onsibl	le for obtaini	ng the inform	nation, I beli	eve that the	e
	ossibliity of fin							10					
Name a	nd Official Title	(Please type	or print)		Sig	nature	7					Date Signer	d
Theod	ore A. Pagano	, P.E., P.G., G	eneral Man	ager		A	/_			>	-	11/25/201	5
							William Commen	-					